

UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>	Attorney Docket No.	M1025/7004
	First Named Inventor or Application Identifier	
	TRANI, Giorgio, et al.	
	Express Mail Label No.	EL018097185US
	Date of Deposit	October 3, 2000

APPLICATION ELEMENTS <i>See MPEP chapter 600 concerning utility patent application contents</i>	ADDRESS TO: Box Patent Application Commissioner for Patents Washington, DC 20231
1. <input checked="" type="checkbox"/> Fee Transmittal Form <i>(Submit an original, and a duplicate for fee processing)</i> 2. <input checked="" type="checkbox"/> Specification [Total pages 9] 6 - pages description 1 - pages abstract 2 - pages claims 12 - Total claims 3. <input checked="" type="checkbox"/> Drawing(s) (35 USC 113) [Total sheets 4] <input type="checkbox"/> Informal <input checked="" type="checkbox"/> Formal [Total drawings 4] 4. <input checked="" type="checkbox"/> Oath or Declaration [Total pages 3] a. <input checked="" type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63(d)) <i>(for continuation/divisional with Box 17 completed)</i> [Note Box 5 below] i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b). 5. <input type="checkbox"/> Incorporation by Reference <i>(usable if Box 4b is checked)</i> The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.	6. <input type="checkbox"/> Microfiche Computer Program (Appendix) 7. <input type="checkbox"/> Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) ACCOMPANYING APPLICATION PARTS 8. <input checked="" type="checkbox"/> Assignment Papers/cover sheet & documents(s) 9. <input type="checkbox"/> 37 CFR 3.73(b) Statement <i>(when there is an assignee)</i> <input type="checkbox"/> Power of Attorney 10. <input type="checkbox"/> English Translation of Document <i>(if applicable)</i> 11. <input type="checkbox"/> Information Disclosure Statement PTO-1449 <input type="checkbox"/> Copies of IDS Citations 12. <input type="checkbox"/> Preliminary Amendment 13. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <i>(Should be specifically itemized)</i> 14. <input type="checkbox"/> Small Entity Statement(s) <input type="checkbox"/> Statement filed in prior application, Status still proper and desired 15. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i>
16. Other:	
17. If a CONTINUING APPLICATION , check appropriate box and supply the requisite information: <input type="checkbox"/> Continuation <input type="checkbox"/> Divisional <input type="checkbox"/> Continuation-in-part (CIP) of prior application No.: <input type="checkbox"/> Cancel in this application original claims of the prior application before calculating the filing fee. <input type="checkbox"/> Amend the specification by inserting before the first line the sentence: This application is a <input type="checkbox"/> continuation <input type="checkbox"/> divisional of application serial no. , filed , entitled , and now .	

18. CORRESPONDENCE ADDRESS					
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19. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED	
NAME	M. Lawrence Oliverio, Reg. No. 30,915
SIGNATURE	<i>M. Lawrence Oliverio</i>
DATE	October 3 2000

Inventor or Identifier: TRANI, Giorgio
 Serial No: Not yet assigned

Filed: Herewith

CHECK BOX, if applicable:

For: CONTAINER WITH INHERENTLY STABLE BASE MADE
 OF FLEXIBLE MATERIAL AND METHOD FOR
 MANUFACTURING IT

☐ **DUPLICATE**

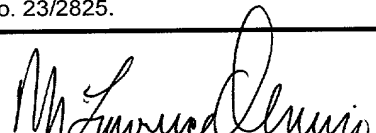
Fee Calculation Sheet

CLAIMS	FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
	TOTAL CLAIMS (37 CFR 1.16(c))	12-20=	0 x	\$18	= \$ 0.00
	INDEPENDENT CLAIMS (37 CFR 1.16(b))	2-3=	0 x	\$78	= \$ 0.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d)) +				\$260
	BASIC FEE (37 CFR 1.16(a))				\$ 690.00
	Total of above Calculations =				\$ 690.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				\$
	Assignment Recordation Fee (if any)				\$ 40.00
	Other Fees (if any).				\$
	TOTAL =				\$ 730.00

1. A check in the amount of \$730.00 is enclosed.

General Authorization to Charge Deposit Account and General Request for Extension of Time

2. a. ☐ If the filing of any paper in this application necessitates the payment of a fee under 37 CFR §§ ☐ 1.16 ☐ 1.17 or ☐ 1.18, and the fee due is in an amount different from any enclosed check or if no check is enclosed, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 23/2825.
- b. ☐ The applicant hereby revokes any prior authorization to charge a fee due under 37 CFR §§ ☐ 1.16 ☐ 1.17 or ☐ 1.18.
3. If the filing of any paper in this application necessitates an extension of time under 37 CFR §1.136(a), the applicant hereby requests such extension of time. If the fee due is in an amount different from any enclosed check or if no check is enclosed, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 23/2825.


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 Attorneys of Record

Docket No. M1025/7004
 Date: October 3, 2000

SPECIFICATION

Be it known that We,

and

have invented certain improvements in

of which the following description in connection with the accompanying drawings is a specification, like reference characters on the drawings indicating like parts in the several figures.

Cross-Reference To Related Applications

This application claims priority to Italian Application No. PD99A000216 filed October 5, 1999, the disclosure of which is incorporated herein by reference.

09678008 100300

BACKGROUND OF THE INVENTION

The present invention relates to a container with an inherently stable, self-shaping base which is made of flexible material and to a method for manufacturing it.

Pouch-like containers made of flexible material, formed with a lightweight sheet starting from a tubular structure, are known and widely used.

These pouches, manufactured according to the state of the art, are poorly suited for containing liquids, granular products or powders which do not have a definite geometry of their own, so that the resulting containers are not inherently stable and cannot all be arranged in the same manner in the packages for transport and storage and in the points of sale and display.

According to the state of the art, containers are also known which instead have a shape of their own but are obtained with rigid or semirigid materials or with complicated structural configurations having a shape of their own which must not be modifiable by the product introduced therein.

This type of container entails a more expensive manufacturing process, and the material from which it is obtained also is more expensive.

Moreover, these containers are convenient only if they are manufactured on the filling line itself, since any storage thereof when empty would be excessively wasteful in terms of space occupation.

SUMMARY OF THE INVENTION

The aim of the present invention is to provide a container to be manufactured using flexible material which assumes and maintains, after filling, a very specific shape of its own.

An object is to provide a container which after filling is inherently stable, i.e., forms a very specific resting base.

Another object is to provide a method for manufacturing a container with an inherently stable base made of flexible material which allows fast and low-cost manufacture.

The present invention also relates to a method for manufacturing an inherently stable container made of flexible material, characterized in that it comprises the following steps:

b) heat-sealing in the sides of the pouch, in the region of the transverse
25 heat-seal, two triangles, each of which has a base which coincides with one
of the two edges of the pouch and a vertex which wedges toward the inside
of said pouch;

30 d) folding and bonding, with an adhesive means, the wings that form

adjacent to the base simultaneously with the heat-sealing of the upper open mouth.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become better apparent from the detailed description of a preferred embodiment and of a method for performing it, which are given by way of non-limitative example and are illustrated in the accompanying drawings, wherein:

Figure 1 is a schematic view of a line for manufacturing the container according to the invention;

Figures 1a, 1b and 1c are three schematic side views of what is shown in Figure 1;

Figure 2 is a view of alternative steps of the manufacture of the container according to the invention;

Figures 2a, 2b and 3c are three side views of what is shown in Figure 2;

Figure 3 is a view of the container before the lower wings are folded;

Figure 4 is a view of the container with its wings folded and with its upper mouth heat-sealed.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures, the container according to the invention is obtained starting from a sheet 10 made of heat-sealable plastic material which is unwound from a roll 11 and is heat-sealed along a longitudinal line 12 after folding said sheet.

In a subsequent step, shaped bars 13 kept at a temperature which allows the melting of the sheet 10 provide, in the region that will correspond to the base region of the container 14 being formed, lateral triangles 15 and a heat-sealed transverse region 16 which closes the base of the container.

Simultaneously with the heat-sealing of the base through the heat-sealed region 16, the upper mouth of the container 17 that has already been formed and filled, is closed by way of a transverse heat-seal 18, while separation of said container is achieved by means of a cropping operation 19 which

separates the two containers in the heat-sealing regions.

Owing to the presence of the heat-sealed triangles 15, the weight of the introduced material determines the formation of a flat base 20 produced by the wedging of the heat-sealed triangles 15 with the optional aid of ribbed guides 21 which are formed in the same operation that forms the heat-sealed triangles 15.

As shown more clearly in Figure 3, the container 14 filled with material, by forming the base 20, forms two protruding wings 22 and 23 indeed because of the presence of the heat-sealed triangles 15.

These two wings, in a final operation, as shown in Figure 4, are folded against the container and are retained by heat-sealing or by applying an adhesive means along the mating line 24.

In this manner, the container 14, besides having a flat base 20 which allows to position it safely, has no external bulk-forming elements and can be packaged together with many others without wasting space.

Folding and gluing of the wings 22 and 23 occurs, as shown in Figure 2, with the aid of a shaped body 25 which has a heated seat 26 which duplicates the final shape of the base to be obtained, which forms due to the effect of the weight.

Said Figure 2 illustrates an auxiliary system for inserting, in the space occupied by the container, now designated by the reference numeral 27, the heat-sealed triangles in order to form the flat base.

Said auxiliary means are constituted by insertion blades 28 and 29 which, by rotating about two axes 30 and 31 which are parallel to the advancement line of the container, push the triangles, now designated by the reference numerals 32 and 33, inside the container 27.

In Figure 2, dashed lines show the two blades 28 and 29 also in a plan view, in which they are illustrated in two positions: an outer one, designated by the reference numerals 28a and 29a, and an inner one, designated by the reference numerals 28b and 29b, which illustrate the insertion of the

triangles.

The resulting container is highly advantageous, since by being formed from a flexible sheet it has all the characteristics and advantages of this type of container related to the manufacturing processes and to the printing thereon of designs and lettering.

Moreover, manufacturing can be of the continuous type, and this is very advantageous because it is inexpensive and uses thoroughly tested forming and filling machines.

Furthermore, the containers can be prepared empty and kept flat for storage until they are filled; during filling they assume their final shape by forming the flat base.

It clearly appears that the intended aim and objects have been achieved together with the corresponding advantages.

It is of course possible to use, as source materials, several known types of heat-sealable flexible material.

The dimensions of the container may be any according to requirements.

The disclosures in Italian Patent Application No. PD99A000216 from which this application claims priority are incorporated herein by reference.

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WHAT IS CLAIMED IS:

1. A container with an inherently stable base made of flexible material, constituted by a pouch which is heat-sealed along a continuous longitudinal line and along evenly spaced transverse lines, said pouch comprising: heat-sealed regions, located in a region where the base is formed, which are substantially shaped like triangles with bases whereof that coincide with an edge of the pouch, and vertices wedging inside said pouch; and ribbed folding guides, said heat-sealed regions and folding guides automatically determining a shape of the container with a predefined base when said container is filled with any of a liquid and a granular product or is punch opened for use.

2. The container of claim 1, wherein the pouch is formed from overlapping sheets, said triangles being obtained by heat-sealing said overlapping sheets constituting the pouch.

15 3. The container of claim 1, further comprising two wings formed at said flat base by said heat-sealed triangles, said wings being are folded against a lower part of said pouch.

4. The container according to claim 3, wherein said wings are coupled by adhesion to walls of the pouch.

20 5. A method for manufacturing an inherently stable container made of
flexible material, comprising the following operating steps:

a) folding a continuous film of flexible material of appropriate width, to obtain a pouch by way of a longitudinal heat-seal and by way of evenly spaced transverse heat-seals, a first one of which is followed by cropping;

25 b) heat-sealing in sides of the pouch, at a region of the transverse heat-seals, two triangles, each of which has a base which coincides with one edge of the pouch and a vertex which wedges inwards said pouch;

c) punch opening said pouch, and optionally filling the pouch with a product;

30 d) folding and bonding, with an adhesive means, wings that form

adjacent to the base and, after filling the pouch, simultaneously with the bonding of the wings, heat-sealing an upper open mouth of the pouch.

6. The method of claim 5, wherein in the first step the film is folded so as to form the pouch, which is closed longitudinally by heat-sealing overlapping flaps of said film, said heat-sealing being preferably located at a center of one of two flat faces of said pouch.

7. The method of claim 5, wherein a longitudinal dimension of the pouch is determined by way of transverse heat-seals.

8. The method of claim 6, wherein the heat-sealing of the triangles
10 comprises heat-sealing of two overlapping sheets of flexible material that
constitute said pouch so as to form at the base, said two triangles with
vertex wedging inside said pouch.

9. The method of claim 5, further comprising forming ribs during the step for forming the heat-sealed triangles, said ribs being adapted to facilitate, by
15 guided deformation, opening of the pouch at filling.

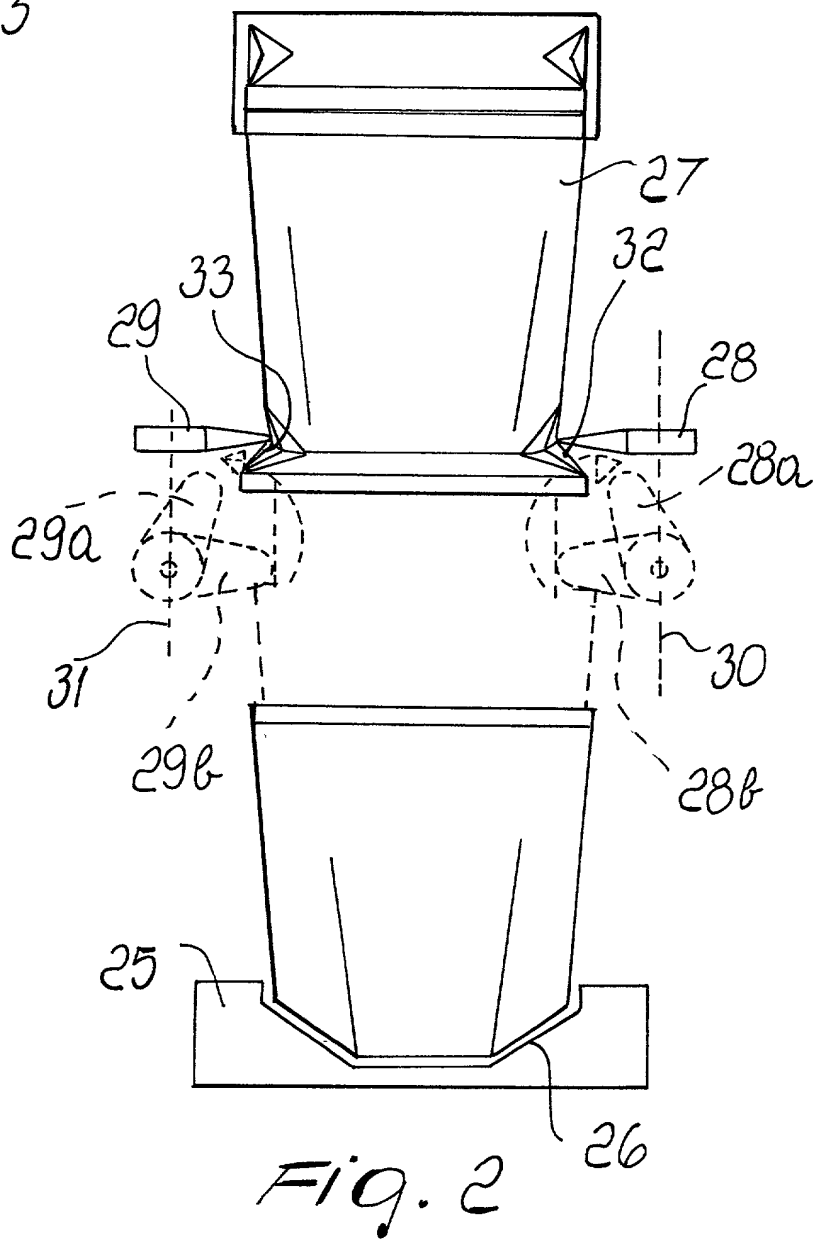
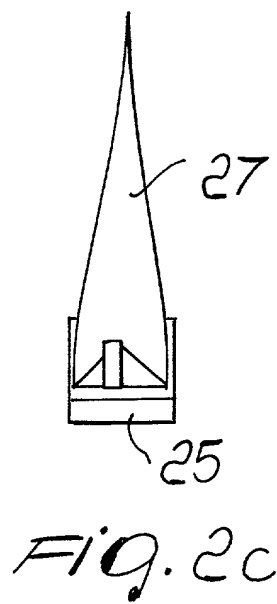
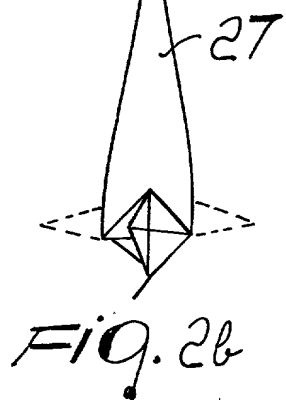
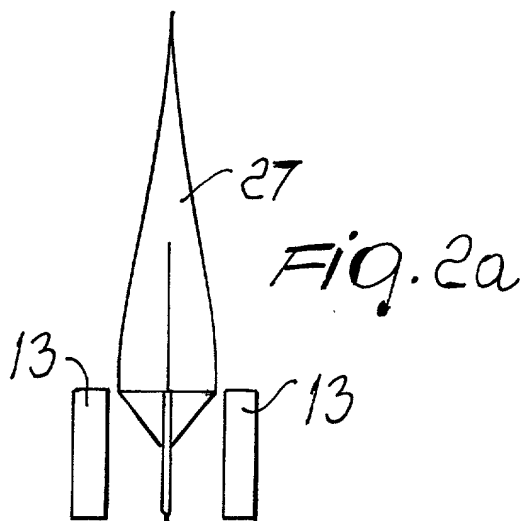
10. The method of claim 9, wherein during filling of the pouch with product a substantially flat base forms, while said wings formed due to the heat-sealed triangles protrude laterally beyond said base.

11. The method of claim 10, wherein following said filling step said
20 wings are folded toward the container and are retained thereon.

12. The method of claim 5, comprising insertion of the heat-sealed triangles inside the container by way of pushing means which push said triangles from the outside inward.

ABSTRACT OF THE DISCLOSURE

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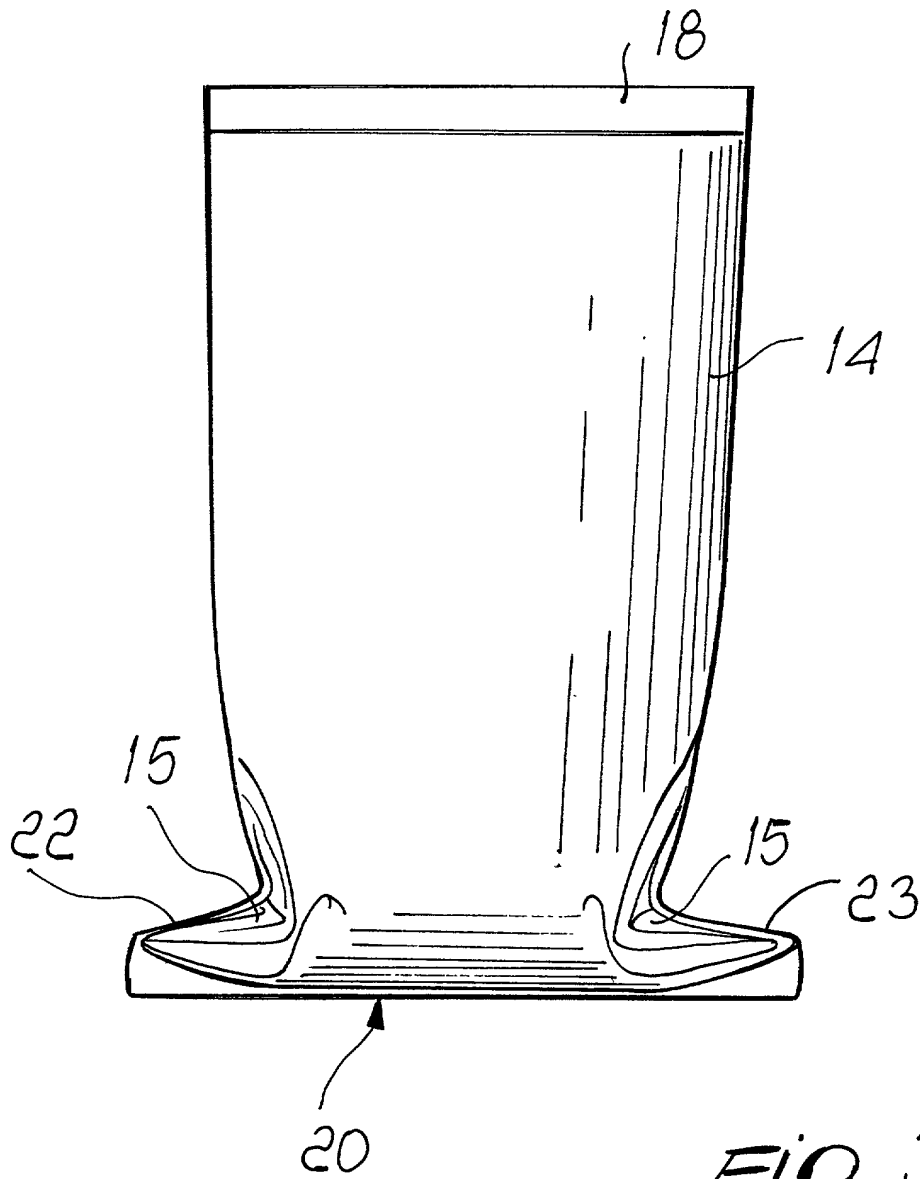


Fig. 3

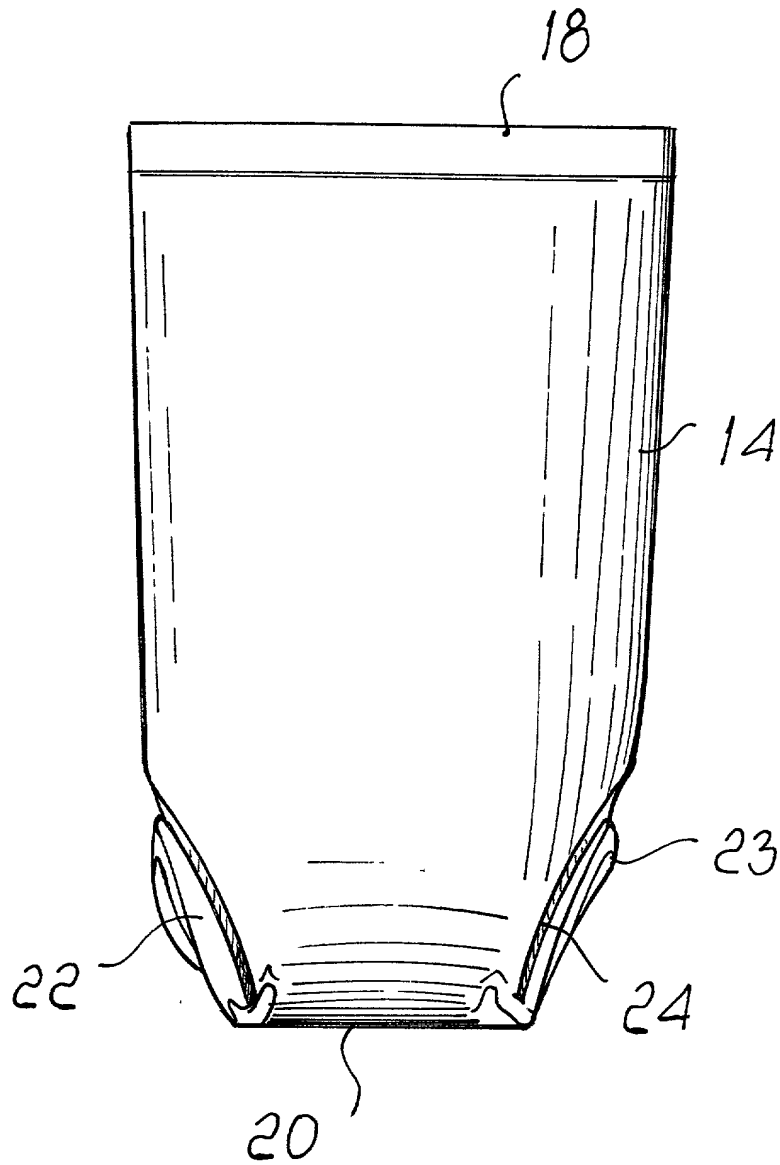


Fig. 4

Declaration and Power of Attorney for patent Application

Dichiarazione e procura ai fini della domanda di brevetto

Italian Language Declaration

Il sottoscritto inventore dichiara che:

La propria residenza, recapito postale e cittadinanza corrispondono a quanto indicato in calce, sotto la propria firma.

Ritengo di essere il primo ed unico inventore originale (se viene elencato in calce un solo nominativo) o il coinventore primo ed originale (se è elencato più di un nominativo) del oggetto rivendicato e per il quale il sottoscritto presenta domanda di brevetto. La invenzione in questione è chiamata

"CONTENITORE CON FONDO AUTOSTABILE IN
MATERIALE FLESSIBILE E PROCEDIMENTO
PER LA SUA REALIZZAZIONE"

e la sua descrizione è allegata alla presente Dichiarazione a meno che non sia spuntata la seguente casella:

- ☐ Il _____
è stata depositata una domanda di brevetto
statunitense numero o una domanda di brevetto
internazionale PCT numero _____
che è stata modificata il _____
(se applicabile).

Il sottoscritto dichiara in oltre di aver letto e compreso il contenuto della descrizione identificata in precedenza, rivendicazioni comprese, come modificati dall'eventuale modifica summenzionata.

Il sottoscritto riconosce l'obbligo di rivelare informazioni essenziali ai fini della determinazione della brevettabilità ai sensi del Titolo 37, Codice dei Regolamenti Federali, §1.56.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

"CONTAINER WITH INHERENTLY STABLE
BASE MADE OF FLEXIBLE MATERIAL AND
METHOD FOR MANUFACTURING IT"

the specification of which is attached hereto unless the following box is checked:

- ☐ was filed on _____
as United States Application Number or PCT
International Application Number _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

Italian Language Declaration

Il sottoscritto rivendico con la presente la priorità prevista dal Titolo 35, Codice degli Stati Uniti, § 119(e)-(d) o § 365(a) in relazione a qualsiasi domanda o domande estere di brevetto o certificato di inventore, o dal Titolo 35, § 365(a) degli stessi Codice in relazione a qualsiasi domanda internazionale PCT nella quale è designato almeno un paese diverso dagli Stati Uniti, I suddetti domande e certificati essendo elencati sotto, e, spuntando le seguenti caselle, ha anche identificato sotto qualsiasi domanda estera di brevetto o certificato di inventore, o domanda internazionale PCT, la cui data di deposito preceda quella della domanda per la quale è rivendicata la priorità.

Prior foreign application(s)

Domande Esteri Anteriori

PD99A000216

(Number)

(Numero)

ITALY (ITALIA)

(Country)

(Nazione)

(Number)

(Numero)

(Country)

(Nazione)

Il sottoscritto rivendica con la presente i benefici previsti dal Titolo 35, Codici degli Stati Uniti, § 119(e), in relazione a qualsiasi domanda o domande provvisorie degli Stati Uniti elencate sotto.

(Application No.)
(N° della domanda)

(Filing Date)
(Data di deposito)

(Application No.)
(N° della domanda)

(Filing Date)
(Data di deposito)

Il sottoscritto rivendica con la presente i benefici previsti dal Titolo 35, Codice degli Stati Uniti, §120, in relazione a qualsiasi domanda o domande statunitensi, o dal Titolo 35, § 365(c) degli stessi Codice in relazione a qualsiasi domanda internazionale PCT nella quale sono designati gli Stati Uniti, I suddette domande essendo elencate sotto e, nella misura in cui l'oggetto di ciascuna rivendicazione di questa domanda non sia stato esposto nella domanda statunitense o internazionale PCT anteriore nel modo previsto dal primo paragrafo del Titolo 35, Codice degli Stati Uniti, § 112, riconosce l'obbligo di rivelare informazioni essenziali ai fini della determinazione della brevettabilità ai sensi del Titolo 37, Codici dei Regolamenti Federali, §156, le quali diventino disponibili durante il periodo compreso tra la data di deposito della domanda nazionale e la data di deposito nazionale o internazionale PCT della presente domanda.

(Application No.)
(N° della domanda)

(Filing Date)
(Data di deposito)

(Application No.)
(N° della domanda)

(Filing Date)
(Data di deposito)

Con la presente, il sottoscritto dichiara veritiere tutte le affermazioni contenute in questa domanda in relazione alle proprie conoscenze e di ritenere vere tutte le affermazioni o informazioni presentate. Dichiara inoltre che tali asserzioni sono state espresse nella piena consapevolezza che le dichiarazioni intenzionalmente false sono punibili con una multa, l'incarcerazione o entrambe, ai sensi della Sezione 1001 del Titolo 18 del Codice degli Stati Uniti e che tali dichiarazioni intenzionalmente false possono mettere a repentaglio la validità della domanda o di qualsiasi brevetto rilasciato in merito.

I hereby claim foreign priority under Title 35, United States Code, §119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed:

Priority not claimed

Diritto di priorità non rivendicato

5 OCTOBER 1999 (5.10.1999)

(Day/Month/Year Filed)

(Giorno, Mese/Anno di deposito)

(Day/Month/Year Filed)

(Giorno, Mese/Anno di deposito)

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Status) (patented, pending, abandoned)
(Stato) (concessione de brevetto, in corso di esame, abbandono)

(Status) (patented, pending, abandoned)
(Stato) (concessione de brevetto, in corso di esame, abbandono)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Italian Language Declaration

PROCURA: Io, sottoscritto inventore, nomino con la presente il seguente avvocato o avvocati e/o agente o agenti al fine di istruire questa pratica e di condurre tutte le operazioni ad essa pertinenti presso l'Ufficio dei Brevetti e Marchi di Fabbbrica: (Elencare il nome ed il numero di matricola)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

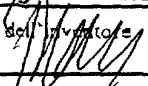
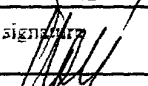
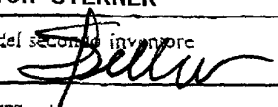
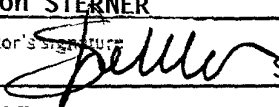
Therese A. Hendricks (30,389)
M. Lawrence Oliverio (30,915)

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Firma dell'inventore 	Inventor's signature 
Data 26.09.2000	Date September 26, 2000
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Giudecca 671	Giudecca 671
Cittadinanza Italiana	Citizenship Italian
Recapito o Casella Postale come Residenza	Post Office Address same as Residence
Nome e cognome dell'eventuale secondo coinventore Marion STERNER	Full name of second or joint inventor Marion STERNER
Firma del secondo inventore 	Inventor's signature 
Data 26.09.2000	Date September 26, 2000
Residenza 30122 VENEZIA - ITALIA	Residence 30122 VENEZIA - ITALY
Castello 6614	Castello 6614
Cittadinanza Tedesca	Citizenship German
Recapito o Casella Postale come Residenza	Post Office Address same as Residence

(Fornire le stesse informazioni e le firme del terzo e degli ulteriori coinventori.)

(Supply similar information and signature for third and sub-sequent joint inventors.)